

Shale stabilizer and inhibitor system

Inhibits shale hydration and reduces the effect of drill solids on viscosity, suitable for offshore

Applications

- Specified for applications where additional inhibition is needed as an alternative to gyp, lime, and potassium system.
- Compatible with most additives, especially low-solids polymer systems
- Highly effective shale stabilizer at all pH levels
- Environmentally approved
- Stable at temperatures in excess of 400 degF [204 degC]
- Reduced potential for bit balling
- Reduced the amount of dilution required and the associated treatment costs
- Most effective when organic thinners such as lignosulfonate are minimal
- Unaffected by contaminants such as hard water, cement, or CO₂

Features

- This system should have a methylene blue capacity under 35.6 kg/m³ [12.5 lb/bbl].
- Normal concentrations of the KLA-GARD system range from 11.4 to 22.8 kg/m³ [4 to 8 lb/bbl]
- Minimum concentration is 11.4 kg/m³ [4 lb/bbl].
- Product is depleted based on formation reactivity, cuttings size, and hole volume drilled.



The KLA-GARD™ shale stabilizer and inhibitor system is an advanced drilling fluid formula that inhibits shale hydration as an alternative to gyp mud, lime, and potassium-based systems. It works by reducing the absorption of water by shale formations during drilling. This helps minimize several drilling issues:

- Excessive dilution and viscosity increases in the drilling mud
- Higher torque and drag on drill strings
- Surge and swab pressure fluctuations
- Balling of the bottomhole assembly and drill bit

The system is compatible with most other drilling fluid additives, especially low-solids polymer systems, and its low toxicity makes it suitable for many environmentally sensitive offshore sites.

How it improves performance

The KLA-GARD system reduces the absorption of water in shale formations during drilling. This helps minimize and eliminate several problems with well construction such as balling and damage to the drill string, bottomhole assembly, and drill bit, which can lead to pullouts and replacement of equipment. It works by adsorbing onto active solids, reducing their water sensitivity.

Limitations

- Should not be added to systems containing high concentrations of active solids; flocculates muds with high methylene blue test (MBT) values, causing excessive viscosity
- Limits the hydration of all clay materials, so bentonite additions must be prehydrated in freshwater
- Due to the interaction of KLA-GARD stabilizer with active solids and bentonite, increased attention must be given to filtration control
- Product is biodegradable and requires a biocide

Toxicity and handling

Bioassay information is available upon request. Handle as an industrial chemical, wearing protective equipment and observing the precautions described in the Safety Data Sheet (SDS).

Packaging and storage

The KLA-GARD stabilizer system is packaged in 55-galUS drums and 5-galUS cans. Store in a dry, well-ventilated area. Keep container closed. Keep away from heat, sparks, and flames. Store away from incompatibles. Follow secure warehousing practices regarding palletizing, banding, shrink-wrapping, and stacking.

Typical Physical Properties

Physical appearance	Transparent to blue clear liquid
Specific gravity	1.05–1.15
pH neat	6.5–9.0
Solubility in water at 20 degC [68 degF]	100%
Flash point	99 degC [210 degF] (PMCC)

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